UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,723	07/23/2001	Mark A. Lauer	LAUM-004	5523

24501 7590 07/06/2005

MARK A LAUER
6601 KOLL CENTER PARKWAY
SUITE 245
PLEASANTON, CA 94566

EXAMINER	
KLIMOWICZ, WILLIAM JOSEPH	

ART UNIT	PAPER NUMBER
2652	

DATE MAILED: 07/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/912,723	LAUER, MARK A.	
	Examiner	Art Unit	
	William J. Klimowicz	2652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 May 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6-14 and 17-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6-14 and 17-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

FINAL REJECTION

Claim Status

Claims 1-4, 6-14 and 17-29 are currently pending.

Claims 5, 15 and 16 have been voluntarily cancelled by the Applicant.

Specification

The disclosure is objected to because of the following informalities:

With regard to page 18 (line 13), the phrase "gate electrode 215" should be changed to the phrase --gate electrode 225-- in order to maintain consistency with the previous description and drawings.

Appropriate correction is required.

Drawings

The drawings are objected to because the reference designators 342, 344 and 360 (see Applicant's disclosure at page 21) referencing wires and input/output pads, are not depicted in the Applicant's figures (e.g., Figure 18).

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "wherein ***no part*** of said substrate

is disposed further than said transducer from said actuator" must be shown or the feature(s) canceled from the claim(s).

That is, e.g., FIG. 1 of Applicant's specification clearly shows wherein the head (33) and substrate layer and the rear portion of pad (50) itself, ***extend beyond*** the transducer layers (40) and (44). That is, the transducer layers appear to be formed on and within the substrate.

If there is no new matter, the Applicant must present all such FIGs. analogous to FIG. 1 clearly and unambiguously disclosing that the substrate can have no portion beyond the layer (44) (e.g., showing layers (44 and (44) formed on a dotted line, wherein the dotted line indicates the end of the substrate with the transducers layers formed within a protection layer.

How this affects the lead layers (56-59) is, however, unclear. Are these layers (56-59) to be also within a protective layer formed on the substrate? This would seem ***inconsistent*** with Applicant's own disclosure in paragraph [0044], wherein it is specifically stated "leads 56, 57, 58 and 59 [are] disposed ***in*** gimbal elements 35." Applicant should very carefully review the specification and drawings and ensure that ***no new matter*** is presented that would conflict with the original drawings and disclosure.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the

drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claim 25 is objected to because of the following informalities:

With regard to claim 25 (line 3), the word --piece-- should be inserted after the word "substrate" in order to maintain claim language consistency.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 23, 26 and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per newly presented claims 23, 26 and 29, the phrase "wherein ***no part*** of said substrate is disposed further than said transducer from said actuator" (emphasis added) is misdescriptive to the disclosed invention, and thus ambiguous. More concretely as is clearly

shown in FIG. 1, the head (33) includes portions that are located laterally and beyond/above (in terms of the positive "x" direction) the transducing elements within pad (50); as noted in Figure 1 of Applicant's disclosure, the upper plane of head substrate (33) clearly and unambiguously lies "above" the transducers layers (40) and (44), albeit slightly so.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 23, 26 and 29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As set forth, *supra*, as per newly presented claims 23, 26 and 29, the phrase "wherein ***no part*** of said substrate is disposed further than said transducer from said actuator" (emphasis added) is unsupported by the Applicant's originally disclosed invention.

More concretely as is clearly shown in FIG. 1, the head (33) includes portions that are located laterally and beyond/above (in terms of the positive "x" direction) the transducing elements within pad (50); as noted in Figure 1 of Applicant's disclosure, the upper plane of head substrate (33) clearly and unambiguously lies slightly "above" the transducers layers (40) and (44).

Moreover still the Applicant's original disclosure is completely silent with respect to "wherein no part of said substrate is disposed further than said transducer from said actuator" other than the Applicant's drawings, which are ambiguous at best in terms of this critical limitation.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 7-10, 20, 21, 22, 27 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Harada et al. (JP 9-035230 A).

As per claims 1 and 20, Harada et al. (JP 9-035230 A) discloses a device for reading or writing information (see FIG. 1 - disk drive), the device comprising: an electromagnetic transducer (magnetic head 1, which includes electromagnetic transducing element - solid layers of an electromagnetic induction element 11 and magnetoresistive element 12 - see paragraph [0029] of previously enclosed English machine translation) including a plurality of solid transducer layers (e.g., the layers of the induction head (11) and/or the layers of the magnetoresistive head (12)), a substrate (e.g., slider (2) and unitary integral flexures (3, 3)) adjoining said transducer (1), said substrate (2, 3) shaped as a rigid body (slider portion which directly adjoins the transducer (1)) adjacent to said transducer (1) and as a plurality of flexible

elements (3) distal to said transducer (1) (e.g., see FIGS. 3, 4 and 5), and an actuator - actuation means as per claim 20 (e.g., portion of load arm between elements (7) which magnetically interacts with (7) to rotationally position the slider (2) to a selected track of the disc (6)) attached (i.e., fastened or secured or joined to) to said substrate (2 including flexing elements (3)) distal to said transducer (1) (via (4) and/or (5)). Note the Examiner has interpreted the term "attached" as encompassing non-direct contact. For example, two objects can be considered as being "attached" (or for that matter "joined" or "secured" or "fastened") to each other by an intervening element, such as resin or glue bonding the two objects together, without requiring direct contact between the two objects.

As per claim 7, wherein said rigid body (2) has a media-facing-surface (e.g., see FIG. 2) separated from a back surface (e.g., upper surface of (2) on which (4) resides - see FIG. 3) in a Z-direction, and at least a portion of said flexible elements (3) is disposed at a Z-height between said surfaces (e.g., see FIG. 3 wherein the lowermost surface of (3) is indeed between the media facing surface of (2) and its uppermost surface).

As per claim 8, wherein said flexible elements (3) are aligned ***substantially*** with a plane, and said rigid body (2) and said actuator are intersected by said plane (see FIG. 2).

As per claim 9, wherein said rigid body (2) has a media-facing-surface (surface of (2) closest to disk (6)) separated from a back surface (back surface of (2) which is contacted by (4)), and said back surface has a protrusion extending away from said media-facing surface (e.g., portion of (21) which rises through and above (2) to form portion (4), which is in a plane above [thus a protrusion] above the back surface of (2) as seen in FIG. 3).

As per claim 10, wherein at least one of said flexible elements (3) contains a plurality of conductive leads (4) - see FIG. 4.

As per claim 21 and 27 (and also claim 24, rejected *infra*), wherein said flexible elements extend substantially parallel to a first plane (e.g., the plane in which the elements (3) lie) and said transducer layers are substantially parallel to a second plane that is perpendicular to said first plane. Note that the actual "transducing" performed by the head of Harada et al. (JP 9-035230 A) is at the pole tips and fringing gap located proximate designator (113) in FIG. 3, and that these nearly vertical pole tip layers are substantially (although not quite) vertical in FIG. 3. Thus, clearly it can be said that the "transducing layers" are substantially parallel to a second plane that is perpendicular to the plane encompassing the flexures (3).

As per claims 22 and 28 (and also claim 25 rejected, *infra*), wherein said transducer layers (see FIG. 3) include a plurality of active layers (e.g., the transducing pole layers of the head as seen in FIG. 3) that convert a magnetic signal to an electrical signal (via the electrical coils (111)), said active layers separated from said substrate (2) by a plurality of inactive layers (including the layers of the substrate (1), the undepicted but necessarily present gap layers and insulative layers surrounding the electrical coils (111) and the top layer of (111) covering the top pole as seen in FIG. 3 of Harada et al. (JP 9-035230 A), that do not convert between magnetic and electrical signals.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2-4, 11-14, 17, 19, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harada et al. (JP 9-035230 A) in view of IBM Technical Disclosure Bulletin entitled "Piezoelectric Actuator for Small Hard Disk Drive," Vol. No. 36, Iss. No. 2, pp. 379-380, published February 1, 1993.

See the discussion of Harada et al. (JP 9-035230 A), *supra*.

As per claim 14, see the discussion of claim 8, *supra*.

As per claim 17, see the discussion of claim 9, *supra*.

As per claim 24, see the discussion of claims 21 and 27, *supra*.

As per claim 25, see the discussion of claims 22 and 28, *supra*.

With regard to claims 2-4, 11 and 12, Harada et al. (JP 9-035230 A) remains silent with respect to the aforementioned actuator including a layer or layers of piezoelectric material (i.e., an electrostrictive actuator as per claim 11).

Such piezoelectric layers (as well as actuators used in the type of disk drive disclosed by Harada et al. (JP 9-035230 A)) are well known in the art, however.

As just one example, IBM Technical Disclosure Bulletin entitled "Piezoelectric Actuator for Small Hard Disk Drive," Vol. No. 36, Iss. No. 2, pp. 379-380, published February 1, 1993 (referred to hereinafter as IBM TDB), discloses a rotary type actuator used in an analogous type of disk drive as that of Harada et al. (JP 9-035230 A), wherein the corresponding actuator used within the IBM TDB includes a piezoelectric layer/layers (i.e., an electrostrictive actuator) formed as part of a piezoelectric actuator, in lieu of the conventional type rotary actuator. The

IBM TDB uses such a piezoelectric actuator in lieu of the conventional actuator in order to, *inter alia*, reduce access time, provide high shock resistance and reduce volume. See the last paragraph of page 1 of the IBM TDB.

Additionally, as per claim 19, wherein the actuator of the IBM TDB includes means ("certain voltage applied to the piezo(s)"- see description of the IBM TDB), for providing electrical voltage to said piezoelectric (i.e., electrostrictive) actuator.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the piezoelectric actuator of the type disclosed by the IBM TDB, in lieu of the conventional actuator disclosed by Harada et al. (JP 9-035230 A).

The rationale is as follows: one of ordinary skill in the art would have been motivated to provide the piezoelectric actuator of the type disclosed by the IBM TDB, in lieu of the conventional actuator disclosed by Harada et al. (JP 9-035230 A) in order to, *inter alia*, reduce access time, provide high shock resistance and reduce volume. See the last paragraph of page 1 of the IBM TDB.

Moreover still, as per claim 3 and 13, the resulting combination of the piezoelectric actuator as taught and explicitly suggested by the IBM TDB, as applied to Harada et al. (JP 9-035230 A), would provide horizontally disposed piezoelectric layers as depicted in the FIGS. of the IBM TDB which would be "substantially parallel" with the horizontal layers of the transducer (e.g., the upper and lower core layers (112) which constitute part of the induction head - see FIG. 3 of Harada et al. (JP 9-035230 A)).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harada et al. (JP 9-035230 A) in view of Endo (JP 06-176517 A).

See the discussion of Harada et al. (JP 9-035230 A), *supra*.

With regard to claim 6, Harada et al. (JP 9-035230 A) does not explicitly show wherein the flexures of the suspension are substantially aligned with a center of mass of said rigid body (i.e., the slider).

Endo (JP 06-176517 A), however, disclose wherein a support suspension portion of the flexure end of a suspension is absorbed into the slider (i.e., rigid body) thickness and thus adjacent to the center of mass of the slider (i.e., rigid body), in order to, *inter alia*, shorten the distance against the surface of the magnetic disk (i.e., by reducing the Z-height) and to further provide stable support of the slider by positioning such flexure(s) adjacent the center of mass of the rigid body.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of a suspension end flexure support provided as being substantially aligned with a center of mass of the rigid body of Harada et al. (JP 9-035230 A), as explicitly taught and suggested by Endo (JP 06-176517 A)..

The rationale is as follows: one of ordinary skill in the art would have been motivated to provide the teaching of a suspension end flexure support provided as being substantially aligned with a center of mass of the rigid body of Harada et al. (JP 9-035230 A), as explicitly taught and suggested by Endo (JP 06-176517 A) in order to, shorten the distance against the surface of the magnetic disk (i.e., by reducing the Z-height) and to further provide stable support of the slider by positioning such flexure(s) adjacent the center of mass of the rigid body.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harada et al. (JP 9-035230 A) and IBM Technical Disclosure Bulletin entitled "Piezoelectric Actuator for Small Hard Disk Drive," Vol. No. 36, Iss. No. 2, pp. 379-380, published February 1, 1993, as applied to claim 11 above, and further in view of Fukuoka (JP 09-148639 A).

See the descriptions of Harada et al. (JP 9-035230 A) and the IBM TDB, *supra*.

As per claim 18, the IBM TDB, as applied to Harada et al. (JP 9-035230 A), remains silent with respect to the composition of the piezoelectric actuator as containing a material including silicon. Note that the slider of Harada et al. (JP 9-035230 A) is indeed formed of silicon as per claim 18.

It is well known, however, that piezoelectric actuators of the type disclosed by the IBM TDB wherein the actuator includes a silicon composition are well known.

As just one specific example, Fukuoka (JP 09-148639 A) discloses a piezoelectric actuator wherein portions thereof include compounds of silicon so as to "prevent deformation of an inner electrode" of a piezoelectric actuator.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the piezoelectric actuator of the IBM TDB as applied to Harada et al. (JP 9-035230 A), as including a compound of silicon as is known, as exemplified and suggested by Fukuoka (JP 09-148639 A).

The rationale is as follows: one of ordinary skill in the art would have been motivated to provide piezoelectric actuator of the IBM TDB as applied to Harada et al. (JP 9-035230 A), as including a compound of silicon as is known, as exemplified and suggested by Fukuoka (JP 09-148639 A) in order to, *inter alia*, prevent deformation of an electrode of a conventional

piezoelectric actuator as explicitly suggested in the manner disclosed by Fukuoka (JP 09-148639 A).

Claims 21 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harada et al. (JP 9-035230 A).

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harada et al. (JP 9-035230 A) in view of IBM Technical Disclosure Bulletin entitled "Piezoelectric Actuator for Small Hard Disk Drive," Vol. No. 36, Iss. No. 2, pp. 379-380, published February 1, 1993.

As per claims 21, 24 and 27, assuming arguendo, that the transducing layers Harada et al. (JP 9-035230 A) at the pole tips proximate designator (113) in FIG. 3 cannot be reasonably construed as being "substantially" perpendicular to the air bearing media-facing surface at their very tip ends at the air-bearing transducing gap (113), and as such, perpendicular to the plane in which flexures (3) reside, Official notice is taken that vertically orientated-to-air-bearing-surface pole transducing layers (not only including perpendicular transducing pole tips, but also perpendicular yokes -corresponding to designator (112) in FIG. 3 of Harada et al. (JP 9-035230 A)) are notoriously old and well known and ubiquitous in the art; such Officially noticed fact being capable of instant and unquestionable demonstration as being well-known.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the transducing layers of the yoke (112) (as well as the nearly vertical pole tips (113) transducing layers disclosed by Harada et al. (JP 9-035230 A)) formed so as to be entirely substantially perpendicular to the air-bearing surface, and as such, perpendicular to the extending direction of the plane within which flexures (3) lie, in order to facilitate the batch

fabrication of the head slider, maximize the distance between the yoke layers and the media to minimize extraneous noise, and reduce the number of bends to the entire pole layers to minimize deleterious fracturing of magnetic domains within the poles, as is well known, established and appreciated in the art.

Claims 21-23 and 27-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Tokuyama et al. (US 5,57,573).

As per claims 1 and 20, Tokuyama et al. (US 5,57,573) discloses a device (e.g., FIG. 1) for reading or writing information (to a disk (1)), the device comprising an electromagnetic transducer (2) including a plurality of solid transducer layers (as is necessarily required), a substrate (30) - see, *inter alia*, COL. 12, lines 52-63- adjoining said transducer, said substrate (30) shaped as a rigid body (portion of slider that is the air bearing and is not flexed as seen, e.g., in FIGS. 5 and/or 6 and/or 7 and/or 23 and/or 24, etc) adjacent to said transducer (2) and as a plurality of flexible elements (plurally divided portions of (30) which flexes as seen, e.g., in FIGS. 23, 24, etc.) distal to said transducer (2), and an actuator (12) (actuation means as per claim 20) attached to said substrate (30) distal to said transducer (2).

As per claim 21 and 27, wherein said flexible elements extend substantially parallel to a first plane and said transducer layers (e.g., see vertical-to-air-bearing-surface orientation in FIGS. 22 and 23) are substantially parallel to a second plane that is perpendicular to said first plane.

As per claims 22 and 28, wherein said transducer layers include a plurality of active layers (e.g., the requisite and inherently required poles of transducer (2)) that convert a magnetic

signal to an electrical signal, said active layers separated from said substrate (30) by a plurality of inactive layers (e.g., the insulative layers that form the substrate and/or requisite transducing gap fringing layer of head (2)) is the substrate that do not convert between magnetic and electrical signals.

As per claims 23 and 29, wherein no part of said substrate (30) is disposed further than said transducer (2) from said actuator (12).

Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tokuyama et al. (US 5,57,573) in view of IBM Technical Disclosure Bulletin entitled "Piezoelectric Actuator for Small Hard Disk Drive," Vol. No. 36, Iss. No. 2, pp. 379-380, published February 1, 1993.

See the discussion of Tokuyama et al. (US 5,57,573), *supra*.

As per claim 24, see the discussion of claims 21 and 27 with respect to Tokuyama et al. (US 5,57,573), *supra*.

As per claim 25, see the discussion of claims 22 and 28 with respect to Tokuyama et al. (US 5,57,573), *supra*.

As per claim 26, see the discussion of claims 23 and 29 with respect to Tokuyama et al. (US 5,57,573), *supra*.

With regard to claim 11 (which is the base claim of newly presented rejected claims 24-26), Tokuyama et al. (US 5,57,573) remains silent with respect to the aforementioned actuator including a layer or layers of piezoelectric material (i.e., an electrostrictive actuator as per claim 11).

Such piezoelectric layers (as well as actuators used in the type of disk drive disclosed by Tokuyama et al. (US 5,57,573)) are well known in the art, however.

As just one example, IBM Technical Disclosure Bulletin entitled "Piezoelectric Actuator for Small Hard Disk Drive," Vol. No. 36, Iss. No. 2, pp. 379-380, published February 1, 1993 (referred to hereinafter as IBM TDB), discloses an actuator used in an analogous type of disk drive as that of Tokuyama et al. (US 5,57,573), wherein the corresponding actuator used within the IBM TDB includes a piezoelectric layer/layers (i.e., an electrostrictive actuator) formed as part of a piezoelectric actuator, in lieu of the conventional type actuator. The IBM TDB uses such a piezoelectric actuator in lieu of the conventional actuator in order to, *inter alia*, reduce access time, provide high shock resistance and reduce volume. See the last paragraph of page 1 of the IBM TDB.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the piezoelectric actuator of the type disclosed by the IBM TDB, in lieu of the conventional actuator disclosed by Tokuyama et al. (US 5,57,573).

The rationale is as follows: one of ordinary skill in the art would have been motivated to provide the piezoelectric actuator of the type disclosed by the IBM TDB, in lieu of the conventional actuator disclosed by Tokuyama et al. (US 5,57,573) in order to, *inter alia*, reduce access time, provide high shock resistance and reduce volume. See the last paragraph of page 1 of the IBM TDB.

Response to Arguments

Applicant's arguments filed May 16, 2005 have been fully considered but they are not persuasive.

At the outset, the Examiner notes that the decision handed down in a Federal Circuit Appeal (CAFC), International Rectifier Corp. v. IXYS Corp. 02-1414,-154 on March 18, 2004, is the manner in which the Examiner has and will interpret the definition of the term "adjoining." In this CAFC decision, a factually similar situation was raised as it pertained to the term "adjoining." See, e.g., page 16 through page 18 of the full text decision, appended to the a Communication mailed April 21, 2004.

The CAFC effectively stated that the term "adjoining" was to be interpreted as "contacting."

As such, the Examiner had previously reopened prosecution in this application based on the interpretation given to the meaning of "adjoining" as being in direct "contact" and informed the Applicant as such, in no uncertain terms.

It is noted that the Applicant ***has had ample opportunity*** to modify the term "adjoining," but has ***not*** exercised this ***option*** to do so.

As such, the Examiner's interpretation given to the meaning of "adjoining" is as being in direct "contact" as per the factually similar aforementioned CAFC case.

The Applicant alleges that Harada et al. (JP 9-035230 A) is somehow "nonenabled."

The Examiner vigorously disagrees with the Applicant's allegation, and the Examiner maintains that Harada et al. (JP 9-035230 A) clearly and without question would enable one of ordinary skill in the art to practice the disclosure of Harada et al. (JP 9-035230 A).

The Applicants somehow alleges that Harada et al. (JP 9-035230 A) fails to disclose an "actuator."

The Examiner directs the Applicant's attention to, *inter alia*, paragraph [0024] of Harada et al. (JP 9-035230 A) and to FIG. 1, 2 and 6. As is clearly depicted in such Figures, the actuator is represented by designator (7).

The Applicant then also attacks the secondary IBM Technical Disclosure Bulletin reference as also being "nonenabled."

Again, the Examiner strenuously disagrees with the Applicant's allegation of nonenablement.

The Examiner notes that the references need not show every single detail of the disclosure, but to merely describe to a person of ordinary skill in the art, a disclosure which would enable one of ordinary skill in the art to practice without undue experimentation what the disclosure purports to show.

The Examiner further maintains that the IBM TDB clearly and unambiguously provides the express motivation for such a combination with Harada, as articulated in extreme detail in the Office action, *supra*.

The Applicant further apparently alleges that the combination of Harada with Endo is somehow improper. As an aside, although not expressly stated by the Applicant, it is assumed that the Applicants are acquiescing the "enablement" of Endo.

Admittedly, as per claim 6, the Examiner maintains that Harada et al. (JP 9-035230 A) does not explicitly show wherein the flexures of the suspension are substantially aligned with a center of mass of said rigid body (i.e., the slider).

Endo (JP 06-176517 A), however, discloses wherein a support suspension portion of the flexure end of a suspension is absorbed into the slider (i.e., rigid body) thickness and thus adjacent to the center of mass of the slider (i.e., rigid body), in order to, *inter alia*, shorten the distance against the surface of the magnetic disk (i.e., by reducing the Z-height) and to further provide stable support of the slider by positioning such flexure(s) adjacent the center of mass of the rigid body.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of a suspension end flexure support provided as being substantially aligned with a center of mass of the rigid body of Harada et al. (JP 9-035230 A), as explicitly taught and suggested by Endo (JP 06-176517 A) in order to, shorten the distance against the surface of the magnetic disk (i.e., by reducing the Z-height) and to further provide stable support of the slider by positioning such flexure(s) adjacent the center of mass of the rigid body.

The Examiner maintains that the test for obviousness is not whether the features of one reference may be bodily incorporated into the other to produce the claimed subject matter, but simply what the combination of references makes obvious to one of ordinary skill in the art.

As has been held in *In re Bozek*, 163 USPQ 545 (CCPA 1969), the test for obviousness is not whether the features of one reference may be bodily incorporated into the other to produce the claimed subject matter, but simply what the combination of references makes obvious to one

having ordinary skill in the pertinent at. See also *In re Mapelsden*, 51 CCPA 1123, 329 F.2d 321, 141 USPQ 30 (1964); *In re Henley*, 44 CCPA 701, 239 F.2d 3, 112 USPQ 56 (1956); *In re Richman*, 165 USPQ 509 (CCPA 1970); *In re Van Beckum*, 169 USPQ 47 (CCPA 1971) and also *In re Sneed*, 710 F.2d 1544, 218 USPQ 385 (Fed. Cir. 1983).

For the foregoing reasons, the Examiner maintains a *prima facie* case of anticipation (or obviousness) in view of the reference evidence. Based on the totality of the record, including due consideration of Applicant's arguments, the Examiner determines that the preponderance of evidence weighs most heavily in favor of anticipation within the meaning of 35 USC section 102 or obviousness within the meaning of section 103(a).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection (i.e., partial new grounds based on the newly presented claims) presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William J. Klimowicz whose telephone number is (571) 272-7577. The examiner can normally be reached on Monday-Thursday (6:30AM-5:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

William J. Klimowicz
Primary Examiner
Art Unit 2652

WJK